ARMY RESEARCH LABORATORY

ORCA User's Manual Glossary

by Owen P. Litt

ARL-SR-124   **September 2004**

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Owen P. Litt
Survivability/Lethality Analysis Directorate, ARL

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14. ABSTRACT

The Operational Requirements-based Casualty Assessment (ORCA) User's Manual consists of technical, chemical, anatomical, physiological, and medical terms. It also consists of abbreviations, acronyms, and symbols. This glossary in intended to be used as an aid in providing a convenient source of definitions or brief explanations of the contents.

15. SUBJECT TERMS

ORCA model, casualty assessment, insult, blast insult, penetration insult, acceleration insult, toxic substance insult, directed energy insult, thermal exposure, lethality, injury severity, injury vector, elemental capabilities, incapacitation, modeling and simulation

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Contents

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1. Chapter 1: Section Ordered Glossary

This chapter consists of words, symbols, acronyms, and phrases from the Operational Requirements-based Casualty Assessment (ORCA) User's Manual. They are arranged by the section in which they are found and usually in the order in which they appear.

1.1 Introduction

ORCA   Operational Requirements-based Casualty Assessment.

Insult   External event which causes injury.

GUI   Graphical user interface.

Insults addressed by ORCA:

- blast,

- penetration,

- thermal exposure,

- toxic gases,

- directed energy (electromagnetic waves: laser, microwaves, x-rays, etc.),

- blunt trauma, and

- abrupt acceleration.

1.2 Methodology

Systemic   Affecting the entire body.

Respiratory   Affecting breathing.

Toxic   Poison.

Deleterious   Injurious.

Injury vector   The 473 body elements which have been specifically defined and geometrically modeled.

ECV   Elemental capability vector.

Operational casualty   An individual who does not have the elemental capabilities to fully perform the job.

Partial casualty	An individual's capabilities fall between the full requirements and the minimal requirements to perform an assigned task.
Visual acuity and color discrimination	Compared to normal vision standards.
Night vision	Compared to standard night vision scale.
Visual field of view	Peripheral vision.
Binocularism and motility	Coordinated vision through both eyes and ability to move at will.
Hearing-threshold: low frequency	Compared to standard of normal threshold.
Hearing-threshold: high frequency	Compared to standard of normal threshold.
Binauralism	Coordinated hearing through both ears.
Somatic senses	Whole-body senses: touch, hot and cold, etc.
Balance	Standing stability while performing required tasks.
Cognitive mental processing	Rational interpretation of situation and application to required tasks.
Visual mental processing	Correctly understanding what is seen.
Auditory mental processing	Correctly understanding what is heard.
Psychomotor mental processing	Correctly able to respond physically to situation.
Speech articulation/intelligibility	Correctly and clearly describe the situation.
Vocal power/background noise	Decibel (dB) of useful vocal information at 1 m/dB of noise.
dB	Decibel: The dB value is calculated by taking the log of the ratio of the measured or calculated power (P_2) with respect to a reference power (P_1). This result is then multiplied by 10 to obtain the value in dB. The formula for calculating the dB value of two ratios is shown in the following equation:

$$dB = \log_{10} \frac{P_2}{P_1}.$$

1.3 Running ORCA

Operational requirements	Random distribution.

1.4 Insults

1.4.1 Blast Insults

Landmine	Explosive device placed beneath the ground.
Blast overpressure	Blast wave-front pressure minus ambient air pressure.
Blast loading	Blast wave-front impact characteristics and distribution on a target.
Fragment loading	Fragment wave-front impact characteristics and distribution on a target.
Time history data	Blast overpressure as a function of time.
Friedlander equation	Simulated blast wave front. Assumes instant increase of pressure from ambient to peak, then an exponential decay back to ambient pressure. User inputs include peak (pressure pounds per square inch [psi]), duration (milliseconds [ms]), and time constant (the number of time constants within the duration of the blast overpressure wave front).
Triangular blast wave	Simulated blast wave front. Assumes instant increase of pressure from ambient to peak, then a constant decay back to ambient pressure. User inputs include peak pressure (psi), duration (ms), and time constant (the number of time constants within the duration of the blast overpressure wave front).
Blast orientation	Orientation of an individual with respect to the blast wave front. User inputs only apply to Friedlander and triangular blast wave options.

1.4.2 Penetration

Flechette	A long slender pointed rod with fins.
ComputerMan	Computer model of a man for the purpose of injury studies.
Degradation	Incapacitation.
Density	Mass per volume.
Shape factor	A shape-related coefficient of momentum (mass × velocity) and density for predicting penetration. A shape-related coefficient of mass and density for predicting penetration hole size.
Metric units	SI (International System of Units) units: meters, kilograms, newtons, and seconds. Non-SI units: centimeters, grams, and dyne.
English units	Feet, pound-mass or slugs, pounds, grains (0.000142857 lb, or 7000 gr = 1 lb), and seconds.
Casing fragment	Warhead cover.
Grid of shots	Projectiles from different origins.
Point-burst shots	Projectiles from one origin.
Yaw angle	An angle, with respect to the shotline and in a plane perpendicular to the vertical plane and intersecting the central axis of the projectile.
Pitch angle (elevation angle)	An angle, with respect to the shotline and in the vertical plane through the central axis of the projectile.

1.4.2.1 The Anatomical Model

Shotline	Path along which the penetrator travels.
Hit location	Location where the projectile shotline intersects ComputerMan.

1.4.2.2 Processing a Single Shot

Azimuth angle (= yaw angle)

An angle, with respect to the shotline and in a plane perpendicular to the vertical plane and intersecting the central axis of the projectile.

Elevation angle (= pitch angle)

An angle, with respect to the shotline and in the vertical plane through the central axis of the projectile.

1.4.2.3 Processing Grid Run

Attack direction

Azimuth angle.

1.4.2.4 Processing Point-Burst Shot

Cone half-angle

The angle from the origin, of a directed explosion of fragments, between the shotline and the greatest angle containing the fragment distribution.

1.4.3 Acceleration Insult

SAE

Society of Automotive Engineers.

SAEJ211   `

Document which specifies manikin transducer frequency responses.

CFC

Channel frequency classes.

Manikin

Crash test dummy with accelerometer transducers, which was used in acceleration injury studies.

Landmine blast tests

Landmine explosion beneath a vehicle with one or more instrumented manikins.

USAARL

U.S. Army Aeromedical Research Laboratory.

AMANDA

Analysis of MANikin Data.

Acceleration time history

Graph of acceleration vs. time.

Triaxial plots

Acceleration time histories along three mutually orthogonal directions.

1.4.3.1 AMANDA Assessment

Head accelerations	Triaxial time history.
Neck forces	Determined from force = mass × acceleration.
Neck moments	Twisting force.
Chest accelerations	Triaxial time history.
Pelvis accelerations	Triaxial time history.
Lumbar spine forces	Determined from force = mass × acceleration.
Lumbar spine moments	Twisting force.
Femur and tibia loads	Determined from force = mass × acceleration.
Seat (pelvis) accelerations	Triaxial time history.
Transducer	Instrument which measures physical phenomenon.
Dataset	Set of computer files of data for a particular event.
Polarity of the signal	+ polarity: positive accelerations displayed above the horizontal axis. − polarity: positive accelerations displayed below the horizontal axis.
Hz	Frequency in cycles (of pulses) per second.
dB/octave	Octave refers to two times a given frequency.
Frequency response	Domain of frequencies within which there is physical response to the signal.
Hybrid III manikin	A manikin used in crash tests.
Pelvis	Skeletal structure at the base of the spinal column.
Lumbar spine	The five lowest vertebrae of the spine.
Femur	Thighbone.
Tibia	The leg bone directly beneath the base of the femur and directly above the connective tissue of the foot.

1.4.3.2 Zero Shift (Bias Removal)

Direct current (DC)   The vertical level of zero.
(constant current amplitude)

1.4.3.3 AMANDA's Analysis Selection Window

Triaxial signal   Measured signal at a point along three mutually
                                             perpendicular directions.

1.4.3.4 The Interactive Injury Assessment Window

Time history plot   Graph of amplitude vs. time.

1.4.4 Toxic Substance Insult

Combustion   Burning.

Combustion products   Chemical compounds produced by combustion.

Industrial agents   Industrial chemical toxins.

Military agents   Military chemical toxins.

Injury vector   Anatomical elements subject to injury.

ECV   Elemental capabilities vector.

Toxin   Poisonous substance.

ProbInc   Probability of incapacitation.

External partial pressures   Anatomical impact points from external sources.

ExtCon   External concentrations.

O_2 Molecular oxygen.

CO_2 Carbon dioxide.

Ac   Actinium.

HCN   Hydrogen cyanide.

CO   Carbon monoxide.

NO_2 Nitrous oxide.

HCL   Hydrogen chloride (hydrochloric acid).

RMV   Root mean velocity (milliliter per minute).

1.4.4.1 Toxic Agent Lookup (Analysis 3)

ppm	Parts per million.
mg/m^3	Milligrams per cubic meter.

1.4.4.2 Military Agents

GA	Tabun: nerve agent.
GB	Sarin: nerve agent.
GD	Soman: nerve agent.
GF	Cyclosarin: nerve agent.
VX	Tabun: nerve agent.

1.4.5 Thermal Exposure

Exposure time	Time that the skin is exposed to the heat source.
Maximum calculation time	Maximum interval of time allowed by the software.
Calculation interval	Time step interval.
Water boiling temperature	Temperature at which water boils.
Density	Mass per unit volume of the skin.
Thickness	Thickness between the surface and base of the skin.
Absorptivity	Absorption rate of the skin.
Convective blood cooling factor	Rate at which blood absorbs heat as it goes through muscle tissue.
Number of nodes	Number of units of depth increments from the skin surface.
Number of extra nodes	Smaller skin depth increments.
Heat flux	Calories per square centimeter per second.
Core temperature	Temperature at the base of the skin.
Absorptivity	Fraction of incident heat which is absorbed by the skin.
Diffusion	Rate at which heat spreads.
Micron	1/1,000,000 m.

1.4.6 Directed Energy

Directed energy	Distance traveled by one cycle of a signal: wavelength = signal speed per signal frequency.
Laser intensity	Power per unit area or energy per area*time.
Continuous wave laser	Uninterrupted sine wave signal.
Pulsed laser	Short duration sequence of sine wave signals.
PRF	Pulse repetition frequency.
Pulse width	Duration of a laser output pulse of light.
Flash blindness	Temporary blindness from exposure to intense light.
Cornea	Transparent membrane at the front of the eye.
Retina	Light-sensitive membrane in the eye.

1.4.7 Directed Energy Input Menu

Exponential notation	$1E - 07 = 0.0000001$.
μm	1/1,000,000 m.
Joule	Unit of energy.
Joules/cm^2	Intensity per unit time.

1.5 Injury Results

Deleterious	Harmful.
Lung(superior lobe)L	Upper left lobe.
Lung(inferior lobe)L	Lower left lobe.
Lung(middle lobe)R	Middle right lobe.
Lung(superior lobe)R	Upper left lobe.
Lung(inferior lobe)R	Upper left lobe.
Sepsis	Presence of pathogenic substances in blood or tissues.
Pathogenic	Disease-causing substances.

1.5.1 Blast Injury

Blast overpressure   Pressure shock wave resulting from an explosion.

Deleterious process   A process resulting in injury.

Respiration   Breathing.

1.5.2 Penetration Injury

Core vein   Internal organic veins.

Core artery   Internal organic arteries.

Muscle (pectoralis major, R)   Chest muscle.

Muscle (thorax, NFS)   Intercostal muscles: muscles connected to the rib cage.

Subcutaneous tissue   Tissue beneath the skin.

Heart (epicardium and myocardium)   Outer wall and muscle tissue.

Heart (right atrium)   Right chamber.

Kidney   Anatomical structures in rear of the abdominal cavity.

Adrenals   Glands located near the kidneys.

Liver   Large gland just beneath the diaphragm.

Thorax   Anatomical region between the neck and the diaphragm.

Abdomen   Anatomical region between the diaphragm and the pelvis.

Pelvis   Skeletal structure at the base of the spinal column.

1.5.3 Toxic Substance Injury

Vapor   Gas.

Systemic   Throughout the body.

Visceral   Pertaining to the internal organs of the body.

Cardio   Pertaining to the heart.

Meiosis	Cell division.
Photophobia	Abnormal intolerance of light.
Rhinorrhea	A mucous discharge from the nose.

1.5.4 Thermal Exposure Injury

Antecubital area	Biceps based at the upper and forearm connection.

1.5.5 Directed Energy Injury

LASER	Light amplification by stimulated emission of radiation. The emitted light is coherent: in phase.
Laser power	Energy per time. The units in figure 6.16 of the ORCA User's Manual are surface energy density.
Flash blindness	Temporary blindness from exposure to intense light.
Retina	Light-sensitive membrane in the eye.
Cornea	Transparent membrane at the front of the eye.
Photokeratitis	Inflammation of the cornea.
Ultraviolet	Wavelengths of light shorter than violet and longer than x-ray wavelengths.

1.6   ORCA's Databases

1.6.1 Individual Characteristics

Visual acuity	Visual resolution.
Visual field of view	Relative range of focus.
Visual binocularism	Distance resolution.
Visual motility	Visual image of moving object.
Somatic senses	Sense of touch.
Cognitive mental processing	Understanding observed events.
Psychomotor	Mental control of physical actions.
Torso	Trunk of the human body.
Aerobic	Cardiopulmonary effects.

1.6.2 Operational Requirements Database

Task element	Single action.
Task	Sequence of actions to complete a single task.
Mission	Sequence of tasks to complete a mission (objective).
Job	Collection of tasks required to meet job objectives.
Operational requirements	What is necessary for task elements/tasks or missions/jobs?
Weight factor	Coefficient representing relative importance.

1.7 Assessment

Single analysis	Injury assessment from single insult or from single analysis of multiple insults.
Multiple analysis	Injury assessment from multiple injuries: grid shot and point burst.
Degradation	Diminished capability to perform a task.
Standard deviation	Deviation from average value, which includes about 63% of statistical samples for one standard deviation. Each succeeding deviation includes 63% of the remainder; i.e., .63 * .37 + .63 = .86, or 86% for the second standard deviation. The third standard deviation is .63 * .14 + .86 = .95, or 95%.

1.8 External Files

OBC vector	ORCA body component vector.

2.   Chapter 2: Alphabetically Ordered Glossary

This chapter consists of words, symbols, acronyms, and phrases from the ORCA User's Manual. They are arranged in alphabetical order.

Abdomen	Anatomical region between the diaphragm and the pelvis.
Absorptivity	Absorption rate of the skin.

Absorptivity	Fraction of incident heat, which is absorbed by the skin.
Ac	Actinium.
Acceleration time history	Graph of acceleration vs. time.
Adrenals	Glands located near the kidneys.
Aerobic	Cardiopulmonary effects.
AMANDA	Analysis of MANikin Data.
Antecubital area	Biceps based at the upper and forearm connection.
Attack direction	Azimuth angle.
Auditory mental processing	Correctly understanding what is heard.
Azimuth angle (= yaw angle)	An angle, with respect to the shotline and in a plane perpendicular to the vertical plane and intersecting the central axis of the projectile.
Balance	Standing stability while performing required tasks.
Binauralism	Coordinated hearing through both ears.
Binocularism and motility	Coordinated vision through both eyes and ability to move at will.
Blast loading	Blast wave-front impact characteristics and distribution on a target.
Blast orientation	Orientation of an individual with respect to the blast wave front. User inputs only apply to Friedlander and triangular blast wave options.
Blast overpressure	Pressure shock wave resulting from an explosion.
Blast overpressure	Blast wave-front pressure minus ambient air pressure.
Calculation interval	Time step interval.
Cardio	Pertaining to the heart.
Casing fragment	Warhead cover.
CFC	Channel frequency classes.
Chest accelerations	Triaxial time history.

CO	Carbon monoxide.
CO_2	Carbon dioxide.
Cognitive mental processing	Understanding observed events.
Cognitive mental processing	Rational interpretation of situation and application to required tasks.
Combustion products	Chemical compounds produced by combustion.
Combustion	Burning.
ComputerMan	Computer model of a man for the purpose of injury studies.
Cone half-angle	The angle from the origin, of a directed explosion of fragments, between the shotline and the greatest angle containing the fragment distribution.
Continuous wave laser	Uninterrupted sine wave signal.
Convective blood cooling factor	Rate at which blood absorbs heat as it goes through muscle tissue.
Core artery	Internal organic arteries.
Core temperature	Temperature at the base of the skin.
Core vein	Internal organic veins.
Cornea	Transparent membrane at the front of the eye.
Dataset	Set of computer files of data for a particular event.
dB	Decibel: The dB value is calculated by taking the log of the ratio of the measured or calculated power (P_2) with respect to a reference power (P_1). This result is then multiplied by 10 to obtain the value in dB. The formula for calculating the dB value of two ratios is shown in the following equation:

$$dB = \log_{10} \frac{P_2}{P_1}.$$

dB/octave	Octave refers to two times a given frequency.
DC bias	The vertical level of zero.

Degradation	Incapacitation.
Degradation	Diminished capability to perform a task.
Deleterious process	A process resulting in injury.
Deleterious	Injurious.
Deleterious	Harmful.
Density	Mass per unit volume of the skin.
Density	Mass per volume.
Diffusion	Rate at which heat spreads.
Directed energy	Distance traveled by one cycle of a signal.
ECV	Elemental capability vector.
Elevation angle (= pitch angle)	An angle, with respect to the shotline and in the vertical plane through the central axis of the projectile.
English units	Feet, pound-mass or slugs, pounds, grains (0.000142857 lb, or 7000 gr = 1 lb), and seconds.
Exponential notation	1E-07 = 0.0000001.
Exposure time	Time that the skin is exposed to the heat source.
ExtCon	External concentrations.
External partial pressures	Anatomical impact points from external sources.
Femur and tibia loads	Determined from force = mass × acceleration.
Femur	Thighbone.
Flash blindness	Temporary blindness from exposure to intense light.
Flechette	A long slender pointed rod with fins.
Fragment loading	Fragment wave-front impact characteristics and distribution on a target.
Frequency response	Domain of frequencies within which there is physical response to the signal.

Friedlander equation	Simulated blast wave front. Assumes instant increase of pressure from ambient to peak, then an exponential decay back to ambient pressure. User inputs include peak pressure (psi), duration (ms), and time constant (the number of time constants within the duration of the blast overpressure wave front from ambient to peak, then a constant decay back to ambient pressure).
GA	Tabun: nerve agent.
GB	Sarin: nerve agent.
GD	Soman: nerve agent.
GF	Cyclosarin: nerve agent.
Grid of shots	Projectiles from different origins.
GUI	Graphical user interface.
HCL	Hydrogen chloride (hydrochloric acid).
HCN	Hydrogen cyanide.
Head accelerations	Triaxial time history.
Hearing-threshold: high frequency	Compared to standard of normal threshold.
Hearing-threshold: low frequency	Compared to standard of normal threshold.
Heart (epicardium and myocardium)	Outer wall and muscle tissue.
Heart (right atrium)	Right chamber.
Heat flux	Calories per square centimeter per second.
Hit location	Location where the projectile shotline intersects ComputerMan.
Hybrid III manikin	A manikin used in crash tests.
Hz	Frequency in cycles (of pulses) per second.
Industrial agents	Industrial chemical toxins.
Injury vector	Anatomical elements subject to injury.
Injury vector	The 473 body elements which have been specifically defined and geometrically modeled.

Insult	External event which causes injury.
Job	Collection of tasks required to meet job objectives.
Joule	Unit of energy.
Joules/cm^2	Intensity per unit time.
Kidney	Anatomical structures in rear of the abdominal cavity.
Landmine blast tests	Landmine explosion beneath a vehicle with one or more instrumented manikins.
Landmine	Explosive device placed beneath the ground.
Laser intensity	Power per unit area or energy per area*time.
Laser power	Energy per time. The units in figure 6.16 of the ORCA User's Manual are surface energy density.
LASER	Light amplification by stimulated emission of radiation. The emitted light is coherent: in phase.
Liver	Large gland just beneath the diaphragm.
Lumbar spine forces	Determined from force = mass × acceleration.
Lumbar spine moments	Twisting force.
Lumbar spine	The five lowest vertebrae of the spine.
Lung(inferior lobe)L	Lower left lobe.
Lung(inferior lobe)R	Upper left lobe.
Lung(middle lobe)R	Middle right lobe.
Lung(superior lobe)L	Upper left lobe.
Lung(superior lobe)R	Upper left lobe.
Manikin	Crash test dummy with accelerometer transducers, which was used in acceleration injury studies.
Maximum calculation time	Maximum interval of time allowed by the software.
Meiosis	Cell division.
Metric units	SI (International System Units) units: meters, kilograms, newtons, and seconds.

mg/m^3	Milligrams per cubic meter.
Micron	1/1,000,000 m.
Military agents	Military chemical toxins.
Mission	Sequence of tasks to complete a mission (objective).
Multiple analysis	Injury assessment from multiple injuries: grid shot and point burst.
Muscle (pectoralis major, R)	Chest muscle.
Muscle (thorax, NFS)	Intercostal muscles: muscles connected to the rib cage.
Neck forces	Determined from force = mass × acceleration.
Neck moments	Twisting force.
Night vision	Compared to standard night vision scale.
NO$_2$	Nitrous oxide.
Non-SI units	Centimeters, grams, and dyne.
Number of extra nodes	Smaller skin depth increments.
Number of nodes	Number of units of depth increments from the skin surface.
O$_2$	Molecular oxygen.
OBC vector	ORCA body component vector.
Operational casualty	An individual who does not have the elemental capabilities to fully perform the job.
Operational requirements	Mental and physical requirements associated with assigned tasks.
Operational requirements	What is necessary for task elements/tasks or missions/jobs?
ORCA	Operational Requirements-based Casualty Assessment.
Partial casualty	An individual's capabilities fall between the full requirements and the minimal requirements to perform an assigned task.

Pathogenic	Disease-causing substances.
Pelvis accelerations	Triaxial time history.
Pelvis	Skeletal structure at the base of the spinal column.
Photokeratitis	Inflammation of the cornea.
Photophobia	Abnormal intolerance of light.
Pitch angle (elevation angle)	An angle, with respect to the shotline and in the vertical plane through the central axis of the projectile.
Point-burst shots	Projectiles from one origin.
Polarity of the signal	+ polarity: positive accelerations displayed above the horizontal axis. − polarity: positive accelerations displayed below the horizontal axis.
ppm	Parts per million.
PRF	Pulse repetition frequency.
ProbInc	Probability of incapacitation.
Psychomotor mental processing	Correctly able to respond physically to situation.
Psychomotor	Mental control of physical actions.
Pulse width	Duration of a laser output pulse of light.
Pulsed laser	Short duration sequence of sine wave signals.
Respiration	Breathing.
Respiratory	Affecting breathing.
Retina	Light-sensitive membrane in the eye.
Rhinorrhea	A mucous discharge from the nose.
RMV	Root mean velocity (millimeter per minute).
SAE	Society of Automotive Engineers.
SAEJ211	Document which specifies manikin transducer frequency responses.
Seat (pelvis) accelerations	Triaxial time history.

Sepsis	Presence of pathogenic substances in blood or tissues.
Shape factor	A shape-related coefficient of momentum (mass × velocity) and density for predicting penetration. A shape-related coefficient of mass and density for predicting penetration hole size.
Shotline	Path along which the penetrator travels.
Single analysis	Injury assessment from single insult or from single analysis of multiple insults.
Somatic senses	Whole-body senses: touch, hot and cold, etc.
Somatic senses	Sense of touch.
Speech articulation/intelligibility	Correctly and clearly describe the situation.
Standard deviation	Deviation from average value, which includes about 63% of statistical samples for one standard deviation. Each succeeding deviation includes 63% of the remainder; i.e., .63 * .37 + .63 = .86, or 86% for the second standard deviation. The third standard deviation is .63 * .14 + .86 = .95, or 95%.
Stochastic	Random distribution.
Subcutaneous tissue	Tissue beneath the skin.
Systemic	Affecting the entire body.
Systemic	Throughout the body.
Task element	Single action.
Task	Sequence of actions to complete a single task.
Thickness	Thickness between the surface and base of the skin.
Thorax	Anatomical region between the neck and the diaphragm.
Tibia	The leg bone directly beneath the base of the femur and directly above the connective tissue of the foot.
Time history plot	Graph of amplitude vs. time.
Time history data	Blast overpressure as a function of time.

Torso	Trunk of the human body.
Toxic	Poison.
Toxin	Poisonous substance.
Transducer	Instrument which measures physical phenomenon.
Triangular blast wave	Simulated blast wave front. Assumes instant increase of pressure
Triaxial plots	Acceleration time histories along three mutually orthogonal directions.
Triaxial signal	Measured signal at a point along three mutually perpendicular directions.
Ultraviolet	Wavelengths of light shorter than violet and longer than x-ray wavelengths.
USAARL	U.S. Army Aeromedical Research Laboratory.
Vapor	Gas.
Visceral	Pertaining to the internal organs of the body.
Visual acuity and color discrimination	Compared to normal vision standards.
Visual acuity	Visual resolution.
Visual binocularism	Distance resolution.
Visual field of view	Peripheral vision.
Visual field of view	Relative range of focus.
Visual mental processing	Correctly understanding what is seen.
Visual motility	Visual image of moving object.
Vocal power/background noise	Decibel of useful vocal information at 1m/dB of noise.
VX	Tabun: nerve agent.
Water boiling temperature	Temperature at which water boils: wavelength = signal speed per signal frequency.
Weight factor	Coefficient representing relative importance.

Weighted Task Average (WTA)	A numerical measure of effect (between 0 and 1) represented by the weighted average of all computed task degradations observed in the set of tasks that comprise a job. It is equal to the sum of the performance value, multiplied by the tasks weight factor, and divided by the sum of the weight factors for the entire job.
Weighted Task Average Impairment (WTAI)	A numerical measure of effect (between 0 and 1) represented by the weighted average of all computed task degradations observed in the set of tasks that comprise a job. It is equal to one minus the sum of the performance value, multiplied by the tasks weight factor, and divided by the sum of the weight factors for the entire job. WTAI is an expected level of incapacitation.
Yaw angle	An angle, with respect to the shotline and in a plane perpendicular to the vertical plane and intersecting the central axis of the projectile.
μm	1/1,000,000 m.

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